REMARKS

This amendment is responsive to the Office Action dated January 6, 2010. Claim 8 has been amended. Claims 2-5, 7, 9, 10, 14, 16, 17, 23-25, 28, 29, 31, 34-38 and 41 have been previously cancelled. Claims 1, 6, 8, 11-13, 15, 18-22, 26, 27, 30, 32, 33, 39 and 40 are pending.

Claim Rejection Under 35 U.S.C. § 103

In the Office Action, the Examiner rejected claims 1, 8, 18–22, 26, 27, 30, 39 and 40 under 35 U.S.C. 103(a) as being unpatentable over Pesce et al. (US 7,328,278) in view of Sankaran et a. (US 2003/0231587) and Gaddis et al. (US 7,554,930). In the Office Action, the Examiner also rejected claims 6, 11 12, 13, 15, 32 and 33 under 35 U.S.C. 103(a) as being unpatentable over Pesce in view of Sankaran, Gaddis and Rochberger et al. (US 6,212,188).

Claim 1

As an initial matter, Applicant notes that the Examiner rejected claim 11 as being unpatentable over the combination of Pesce, Sankaran, Gaddis and Rochberger but then makes no reference to Rochberger when presenting the rejection against claim 11. Considering that no portion of Rochberger was cited in rejecting claim 11, Applicant addresses the rejection of claim 11 as if the rejection were presented based on the combination of Pesce, Sankaran and Gaddis rather than the combination of Pesce, Sankaran, Gaddis and Rochberger until such time that the Examiner explicitly cites to Rochberger as teaching or suggesting some aspect of claim 11.

Applicant respectfully traverses the rejections to the extent such rejections may be considered applicable to the claims as amended. The applied references fail to disclose or suggest the techniques defined by Applicant's claims, and provide no teaching that would have suggested the desirability of modification to arrive at the claimed invention.

Pese, Sankaran and Gaddis

With reference to independent claim 11, Pesce, Sankaran and Gaddis lack any teaching that would have suggested a method comprising, when the number of routes exported from the exterior routing protocol process to the interior routing protocol process exceeds an export limit, operating the network device in an overload condition in which the network device: (i) updates routing information of the interior routing protocol to clear the routes previously exported from

the exterior routing protocol, (ii) rebuilds the routing information of the interior routing protocol by updating the routing information of the interior routing protocol to associate interior routes with a maximum metric that defines a maximum distance from the network device to neighboring network devices, and (iii) advertises the updated routing information to another network device.

Thus, according to th language of claim 11, the network device enters an overload condition upon exceeding an export limit that limits the number of routers capable of being exported from the exterior routing protocol to the interior routing protocol. Claim 11 requires that, after entering this overload condition, the network device updates interior routes to clear, (i.e. remove) the routes that were previously exported from the exterior routing protocol to the interior routing protocol. Claim 11 also requires that, when operating in the overload condition, the network device rebuilds the <u>interior routing information</u> to associate the remaining <u>interior routes</u> with a maximum metric that defines a maximum distance from the network device to the neighboring network device and then advertises this updated interior routing information to another network device. For example, as explained in paragraph [0011] of Applicant's specification, by advertising this updated routing information where each interior route is associated with the maximum metric, the network device may effectively remove itself from the network for purposes of routing within the interior of the network.

To aid the understanding of how advertising this information may effectively remove the network device from the network, consider that other network devices that receive this routing information typically respond by performing a process referred to as routing resolution to select routes to interior network destinations based on the advertised metrics. By advertising metrics associated with a maximum value (i.e., a value sufficient to cause the other network device to select routes other than those routes advertised by the overloaded network device) the other network devices select alternate routes to the same destinations that avoid the network device) "effectively" removes the overloaded network device because the other network devices will most likely select the other route. If there is not another route to the same destination, however, the other network devices will select the overloaded network device but will do so knowing that it may take longer to reach that destination than it normally would. Consequently, should an overload condition occur, the techniques set forth by claim 11 provide a form of graceful failure

that allows the overloaded router to provide limited routing functionality for routes that require use of the router.

The combination of references fails to provide any teaching to suggest these aspects of Applicant's claim 11. Pesce teaches to a system that allows routing information stored to a first routing database to be exported to a second routing database in accordance with stored route mapping information.[1] Pesce describes one example of applying this route mapping information in column 3, lines 23-28 in which the stored route mapping information is used to export "said routing information from a first routing database … of the first routing source, e.g., the OSPF protocol, and [import] it into a second routing database … of a second routing source, e.g.., the BGP protocol." The OSPF protocol is often considered an interior routing protocol, while BGP is often considered an exterior routing protocol. Pesce further indicates that this system may employ blocking information that "identifies at least one couple of routing sources … and overrides the routing mapping information."[2] Pesce explains that this blocking information is useful "in order to leave to the operator the possibility of blocking some kind of mapping in particular operating conditions of the network."[3]

Pesce suggests that each rule in a table that stores the route mapping information, where such rule is referred to an entry in a set rule table, comprises information relating to at least a metric value and a metric scale.[4] Pesce, however, provides little clarification as to what this metric represents. In column 9, lines 17-25, Pesce indicates that a lower metric value is to be used for a metric filter, where "[i]n order to match, routes must have a metric value higher or equal to the value reported in this field."

In rejecting the aspect of claim 11 directed to rebuilding the routing information of the interior routing protocol by updating the routing information of the interior routing protocol to associate interior routes with ***a maximum metric*** that defines a maximum distance from the network device to neighboring network devices, the Examiner suggests that the metric associated with the rules of the route mapping information is the same as Applicant's maximum metric that is associated with the routing information of the interior routing protocol, which is clearly improper. Pesce explicitly teaches that this metric value is associated with the route mapping

[1] Abstract.
[2] Column 4, lines 52-59.
[3] Column 4, lines 59-61.
[4] Column 5, lines 15-18.

information, not the routing information. Moreover, Pesce does not actually describe updating this metric, but even assuming Pesce does mention updating this metric, Pesce would update a metric associated with route mapping information, which is substantially different from the Applicant's claim 11 that requires rebuilding the routing information of the interior routing protocol by updating the *routing information* of the interior routing protocol to associate interior routes with *a maximum metric* that defines a maximum distance from the network device to neighboring network devices.

Moreover, Pesce provides for blocking information that blocks the exportation of certain routes during the exportation process. This blocking information however does not update routing information of the interior routing protocol to clear the routes ***previously exported*** from the exterior routing protocol, as required by claim 11. That is, Pesce provides a mechanism to prevent the exportation of certain routes but this blocking information does not clears routes ***previously exported***. Consequently, Pesce does not teach or suggest update routing information of the interior routing protocol ***to clear the routes previously exported*** from the exterior routing protocol, as required by claim 11.

Neither Sankaran nor Gaddis teach or suggest these aspects of Applicant's claim 11 and thereby cure the deficiencies noted above with respect to Pesce. Consequently, the combination of references lack any teaching to suggest rebuilding the routing information of the interior routing protocol by updating the routing information of the interior routing protocol to associate interior routes with a maximum metric that defines a maximum distance from the network device to neighboring network devices and updating routing information of the interior routing protocol to clear the routes previously exported from the exterior routing protocol, as required by Applicant's claim 11.

In rejecting Applicant's claim 11, the Examiner only relies on paragraphs [0035] and [0045] of Sankaran for its teaching regarding what the Examiner characterizes as maintaining a count of routes exported and rejecting additional routes exported when the count exceeds the export limit set by the command. Paragraph [0035] of Sankaran discloses a threshold that triggers different discard algorithms. In this sense, paragraph [0035] of Sankaran provides for "threshold-specific discard algorithms" that are applied once certain storage thresholds are reached. Consider the example set forth in this portion of Sankaran, which provides that "once a threshold (e.g., a first threshold) is reached, a threshold-specific algorithm is applied … [and]

once another threshold (e.g., a second threshold) is reached, another threshold-specific discard algorithm is applied." According to this portion of Sankaran, the thresholds are defined in terms of a percentage of a storage capacity available to store routing information and the threshold-specific discard algorithms apparently remove redundant routes from the route table. Paragraph [0045 of Sankaran reiterates various teachings of paragraph [0035] in operation with respect to a particular example .

Yet, these cited portions of Sankaran do not teach or suggest rebuilding the routing information of the interior routing protocol by updating the routing information of the interior routing protocol to associate interior routes with a maximum metric that defines a maximum distance from the network device to neighboring network devices, as required by Applicant's claim 11. In this respect, Sankaran does not cure the deficiencies of Pesce noted above.

In addition, the portions of Sankaran relied on by the Examiner to reject claim 11 fail to even so much as suggest other aspects of claim 11. For example, the portions of Sankaran relied on by the Examiner refer to thresholds defined in terms of a percentage of a storage capacity, which is substantially different from an export limit that limits the number of routes exported from the exterior routing protocol process to the interior routing protocol process in the manner required by Applicant's claim 11.

As another example, Sankaran culls the routing table to remove **redundant** routes (i.e., duplicate routes) as noted by paragraph [0035], which is substantially different from updates routing information of the interior routing protocol to ***clear*** the all of the routes that were previously exported from the exterior routing protocol such that only interior routes remain, as required by Applicant's claim 11. That is, the threshold-specific discard algorithm of Sankaran makes no distinction between routes previously exported from the exterior routing protocol and interior routes learned via the interior routing protocol when culling routes in contradiction to the explicit requirements of Applicant's currently amended claim 11.

Likewise, Gaddis does not cure the deficiencies of Pesce or Sankaran noted above. Gaddis is silent with respect to rebuilding the routing information of the interior routing protocol by updating the routing information of the interior routing protocol to associate interior routes with a maximum metric that defines a maximum distance from the network device to neighboring network devices, as required by Applicant's claim 11. In fact, Gaddis as noted below defines a prefix size limit to exclude routes from being injected, but fails to mention any

process whereby routing information of an interior routing protocol is rebuilt after the routes have already been injected. Moreover, Gaddis does not teach or suggest an export limit that limits the number of routes exported from the exterior routing protocol process to the interior routing protocol process in the manner required by Applicant's claim 11.

According to the Examiner, neither Pesce nor Sankaran teaches a user-defined size threshold, but column 17, lines 29-34 of Gaddis teach what the Examiner characterizes as a prefix limit that may be set for injected routes. According to the cited portion of Gaddis, what the Examiner characterizes as a "prefix limit" is in fact a size limit that "may be placed on the prefix/mask to limit the volume of injected routes that will be used." The prefix/mask discussed in this portion of Gaddis refers to an address prefix or IP address mask and the size limit discussed in this portion of Gaddis refers to a limit on the size of the prefix/mask. Defining a limit on a prefix/mask is substantially different than defining an export limit that causes the network device to enter an overload condition in the manner required by Applicant's claim 11. Consequently, Gaddis does not cure this deficiency of Sankaran noted above.

In summary, Pesce teaches to exporting routes between route tables maintained by different routing protocols, one of which may represent an exterior routing protocol while another represents an interior routing protocol. The Pesce system describes route mapping information to effect the exportation of routing information from the exterior routing protocol to the interior routing protocol. The route mapping information includes rules that are stored as entries to a set rule table, each of which may be associated with a metric value and a metric scope. Sankaran describes a system that provides for storage capacity thresholds, which when reached trigger a corresponding one of a plurality of different threshold-specific discard algorithms. The threshold-specific discard algorithms cull redundant routes regardless of whether such routes represent routes exported from the exterior routing protocol to the interior routing protocol. Gaddis then provides teachings for a defining a size limit that limits the size of a prefix/mask.

The combination of Pesce and Sunkaran results in a system capable of defining a threshold and a threshold-specific discard algorithm that limits the exportation of routes from the exterior routing protocol to the interior routing protocol based on a storage capacity available to store routes by the interior routing protocol. Further combining Gaddis with this Pesce/Sankaran system results in a system that enables the definition of this threshold as a size limit placed on

the prefix/mask. Applicant is unsure as to how this combination may produce any feasible result. Consequently, Applicant presumes that the Examiner cites Gaddis only for its suggestion that such thresholds may be user defined.

Even with this assumption in mind, the Pesce/Sunkaran/Gaddis system only enables thresholds to be defined that invoke a threshold-specific discard algorithm that culls routes regardless of whether these routes constitute exported routes or not. That Pesce enables metrics to be associated with the route mapping information and that routes can be blocked using blocking information seems irrelevant considering that the metric required by Applicant's claim 11 is defined for actual routing information, not route mapping information, and the update of the routing information once the network device enters the overload condition is to clear routes previously exported, as noted above with respect to Applicant's claim 11, not block the exportation of routes.

In this respect, the combination of Pesce, Sankaran and Gaddis fails to teach or suggest the method of Applicant's claim 11 comprising, when the number of routes exported from the exterior routing protocol process to the interior routing protocol process exceeds an export limit, operating the network device in an overload condition in which the network device: (i) updates routing information of the interior routing protocol to clear the routes previously exported from the exterior routing protocol, (ii) rebuilds the routing information of the interior routing protocol by updating the routing information of the interior routing protocol to associate interior routes with a maximum metric that defines a maximum distance from the network device to neighboring network devices, and (iii) advertises the updated routing information to another network device.

Independent claims 1, 8, 18, 27 and 33

With regard to independent claims 1, 8, 18, 27 and 33, the applied references fail to teach or suggest each and every limitation recited by these independent claims for at least one of the reasons noted above with respect to claim 11. For example, Pesce, Sankaran and Gaddis fail to teach or suggest updating routing information to associate the routes with a maximum metric that defines a maximum distance from the network device to neighboring network devices when the count exceeds the export limit, as required by applicant's claim 1. As noted above, none of these references teaches or suggests a maximum metric that defines a maximum distance from the

network device to neighboring network devices. Pesce's reference to a metric value and scope, again as noted above, falls short of the metric required by claim 1 in that the Pesce metric value refers to a metric associated with route mapping information not actual routing information. Sankaran and Geddis do not cure this deficiency of Peske. Consequently, the applied references to not teach this aspect of claim 1.

As another example, the applied Pese, Sankaran and Gaddis references fails to teach or suggest maintaining respective counts of routes exported from an exterior routing protocol executing on the network device to each of the instances of the interior routing protocol executing on the network device, as required by currently amended claim 8. Instead, Sankaran only teaches to a storage capacity threshold, which is substantially different from maintaining respective counts of routes exported form an exterior routing protocol, as required by claim 8, as amended. To illustrate the difference, consider that Sankaran thresholds would not discriminate between exported routes and routes learned using the internal routing protocol as both would add routes that increase the amount of memory or storage consumed. In comparison, Applicant's currently amended claim 8 requires maintaining counts of routes exported from an exterior routing protocol, which is substantially different from the thresholds described by Sankaran. Consequently, the applied references to not teach this aspect of claim 8, as amended.

To the extent independent claims 18, 27 and 33 recite limitations similar to those referenced above with respect to claims 1, 8 and 11, the arguments made above apply to these independent claims 27 and 33 and to the claims that depend from claims 1, 8, 11, 18, 27 and 33.

Rochberger

With respect to the additionally cited reference, Rochberger, the Examiner appears to only rely on Rochberger in rejecting claims 6, 11 12, 13, 15, 32 and 33 to teach or suggest setting an overload bit upon a network device entering an overload status. The portions relied on by the Examiner in rejecting these claims however fail to cure the deficiencies noted above with respect to the combination of Pesce, Sankaran and Gaddis. The combination of Pesce, Sankaran and Gaddis therefore fails to teach or suggest the techniques defined by Applicant's claims.

For at least these reasons, the Examiner has failed to establish a prima facie case for non-patentability of Applicant's claims 1, 6, 8, 11-13, 15, 18-22, 26, 27, 30, 32, 33, 39 and 40 under 35 U.S.C. 103(a). Withdrawal of this rejection is requested.

CONCLUSION

All claims in this application are in condition for allowance. Applicant respectfully requests reconsideration and prompt allowance of all pending claims. Please charge any additional fees or credit any overpayment to deposit account number 50-1778. The Examiner is invited to telephone the below-signed attorney to discuss this application.

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